

## REMARKS

By this Response, claims 9, 10, 11, 14, 15 and 18 have been amended. No new matter has been added. Claim 19 has been previously cancelled and claims 1-8 have been previously withdrawn. No further claims have been added or cancelled. Claims 1-18 and 20 are pending.

At the outset, the undersigned thanks the Examiner for the consideration given during the interview and discussion process in the present application. Pursuant to the Interview Summary sent by facsimile on September 13, 2006, the proposed claim amendments are intended to clarify the subject matter thereof including that the reticle is stepped in distinction from a stationary mask. The *Asano et al.* reference does not address stepping of a reticle or problems and solutions associated therewith.

In view of the After Final nature of prosecution, it was agreed to submit an RCE in order to allow the Examiner to reopen prosecution in connection with the proposed claims.

### Rejection of Claims 9-12, 14-16 and 18-20 Under 35 U.S.C. § 102(e)

In the Office Action, the Examiner rejected claims 9-12, 14-16 and 18-20 under 35 U.S.C. § 102(e) as being unpatentable over *Asano et al.* (U.S. Patent No. 6,741,334). This rejection is respectfully traversed.

The subject matter of independent claim 9 is directed to a method for monitoring critical dimension (CD) variations of a reticle. The method includes providing a reticle layer over a substrate, the reticle layer including a patterned area and a test pattern

area wherein a portion of the test pattern area is within a step-distance of a portion of the patterned area, patterning a material by stepping the reticle, and visually inspecting the patterned material for light and dark regions within the test pattern area, the light and dark regions representing a corresponding variance in the patterned area.

The subject matter of independent claim 18 is directed to a method for making a semiconductor device. The method includes patterning a resist material by stepping a reticle, wherein the reticle includes a patterned area and a test pattern, wherein a portion of the test pattern area is within a step-distance of a portion of the patterned area. The method further includes visually inspecting the patterned resist material for light and dark regions within a corresponding test pattern area, the light and dark regions representing a systematic variance in critical dimension (CD) in the patterned resist material, and using the patterned resist material to form a feature of a semiconductor device after visually inspecting.

It is the Examiner's position that *Asano et al.* disclose the limitations of: providing a reticle, said reticle including: a patterned layer (8, Fig. 7) located over a reticle substrate; and a test pattern located (9, Fig. 7) over said reticle substrate, wherein a portion of said test pattern is within a step-distance of a portion of said patterned layer, a variance in said test pattern being indicative of a variance said pattern layer (col. 5, lines 45-65); patterning a material using said reticle; and visually inspecting said material for light and dark regions, said light and dark regions representing said variance in said patterned layer. With regard to independent claim 18, it is the Examiner's position that *Asano et al.* also teach using the patterned resist material to form a feature of a semiconductor device after the visually inspecting.

To the contrary, *Asano et al.* fail to teach or suggest providing or stepping a reticle at the outset. Since *Asano et al.* do not address providing a reticle or the related features of a reticle as claimed, a variance in the test pattern area (which is within a step-distance of a portion of the patterned area) is also not addressed, and *Asano et al.*, therefore do not teach or suggest the claimed features of relating the light and dark regions to variances in the patterned layer. Instead, the purpose of the reference marks 9 in *Asano et al.* is to obtain "optimum exposure conditions" which is accomplished by generating an optical image of the reference marks 9. See column 5, lines 60-62. The observed optical image is equal to an optical image appearing in the resist film surface when an exposure is conducted onto the wafer. See column 6, lines 8-11.

The present specification explains that the forming of a pattern in the reticle can cause alignment problems as between adjacent patterned sections because of the stepping motion required to move the reticle to subsequent positions. Adjacent positions are defined as a "step-distance" because of the one step the reticle moves to reach that position. The present invention addresses the problem of mis-alignment between step-distances by visually examining the test pattern on the patterned material. One of ordinary skill in the art will understand that a mask is a tool that contains patterns which can be transferred to an entire wafer or another mask in just a single exposure and a reticle is a tool that contains a pattern image that needs to be stepped and repeated in order to expose the entire wafer or mask. The device of *Asano et al.*, as illustrated in Figure 15 thereof, is for a forming a single photomask as opposed to stepping a reticle as claimed.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 9-12, 14-16 and 18-20 under 35 U.S.C. § 102(e). Applicants submit that claims 11, 12, 14-16 and claims 19-20 are in condition for allowance, at least by virtue of their dependency from allowable claims 9 and 18, respectively.

Rejection of Claims 13 and 16-17 Under 35 U.S.C. § 103(a)

In the Office Action, the Examiner rejected claims 13 and 16-17 under 35 U.S.C. § 103(a) as being unpatentable over *Asano et al.* in view of *Ausschnitt et al.* (U.S. Patent No. 5,914,784). This rejection is respectfully traversed.

Claim 13 is directed to the reoccurring line/space structure having a pitch of less than about  $3/2$  the wavelength in use. Claims 16 and 17 are directed to visually inspecting the material using an optical microscope and further changing a focus on the optical microscope to cause light and dark regions to become more or less pronounced.

It is the Examiner's position that *Asano et al.* reads on the claims as applied above, but does not disclose the claimed limitation(s) of reoccurring line/space structure having a pitch of less than about  $3/2$  the wavelength in use or visually inspecting the material using an optical microscope and further changing a focus on the optical microscope to cause light and dark regions to become more or less pronounced.

*Ausschnitt et al.* simply disclose using a microscope to determine the edge of an object and do not overcome the deficiencies noted above in connection with *Asano et al.* Thus, the combination, even if made, fails to teach or suggest the claimed invention.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 13 and 16-17 under 35 U.S.C. § 103(a). Applicants submit that claims 13 and 16-17 are further in condition for allowance at least by virtue of their dependency from allowable claim 9.

**CONCLUSION**

Applicants submit that the proposed amendments of claims 9, 10, 11, 14, 15 and 18 do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined and the present amendments simply clarify the subject matter of the existing claims. Therefore, this Amendment should allow for immediate action by the Examiner.

In view of the foregoing remarks, Applicants submit that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicants therefore request the entry of this Amendment, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 20-0668.

Respectfully submitted,

Dated:

9/21/06

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